Proposed Regulation Changes for Striped Bass

(Annotated November 2011)

California Department of Fish and Game

Tuesday, November 8, 2011 at 7:00 PM

Rio Vista & Isleton Club
295 South 7th Street
Rio Vista, CA 94571

SCHEDULED PUBLIC COMMENT MEETINGS FOR STRIPED BASS REGULATORY ACTION

November 8, 2011	Initial Workshop in Rio Vista to review and discuss Department proposed regulation changes for striped bass sport fishing
December 14-15, 2011	Fish and Game Commission Meeting in San Diego to receive Department's presentation on possible striped bass regulation changes. *(F&G Comm. will discuss in Sacramento at February 2012 meeting)*
To be Determined	Fish and Game Commission Notice Meeting *(if F&G Comm. decides to move forward)*
To be Determined	Fish and Game Commission Discussion Meeting *(if F&G Comm. decides to move forward)*
To be Determined	Fish and Game Commission Adoption Meeting *(if F&G Comm. decides to move forward)*
To be Determined	Additional public workshops to review and discuss Department proposed regulation changes for striped bass sport fishing
To be Determined	Public Scoping sessions for CEQA review of Department proposed regulation changes for striped bass sport fishing

Proposal Overview

As part of the settlement (Coalition for a Sustainable Delta, et al. v. McCamman.), DFG was mandated to create a proposal for regulations changes for California's striped bass fishery.

This proposal is now available for public comment. It will be presented to the Fish and Game Commission in December.

If the Commission decides to pursue the proposal, it will likely direct DFG and Commission staff to begin the regulatory process under the Administrative Procedure Act (APA) and the environmental review process under the California Environmental Quality Act (CEQA). ***Both APA and CEQA proceedings provide multiple opportunities for public input.***

If the Commission elects not to pursue the proposal, the process will terminate.

Fish and Game Commission Policy

To increase the number of striped bass to 3 million adults while ***"…[ensuring] that actions to increase striped bass abundance are consistent with the Department's long-term mission and public trust responsibilities including those related to threatened and endangered species and other species of special concern."***

Policy has remained unchanged since 1996.

Why these changes?

- Balances the striped bass fishery with the need to preserve listed species.
- This is not an "all or nothing" proposal. There is a middle ground.
- Based on years of data collected by DFG scientists.
- Data indicates that the existing striped bass fishery in the Delta **will not collapse** if these proposed changes are implemented.

DFG's Proposed Changes:

- Raise daily bag limit to 6 fish
- Raise possession limit to 12 fish
- Lower minimum size to 12 inches
- Establish a "hot spot" at Clifton Court Forebay and specified adjacent waterways
-
  - Daily bag limit = 20 fish
  - Possession limit = 40 fish
  - No size limit
  - Report card
- Allow harvest of striped bass in the Carmel, Pajaro, and Salinas rivers when the fishery would otherwise be closed

Fishery Populations in the Delta and Coastal Estuaries

Striped Bass

Chinook salmon

Delta smelt

Longfin smelt

Steelhead

Tidewater goby

Coho salmon

(all but striped bass are listed as endangered or threatened)

The next 22 slides are examples of the information considered by the Department during development of the proposed fishing regulations.

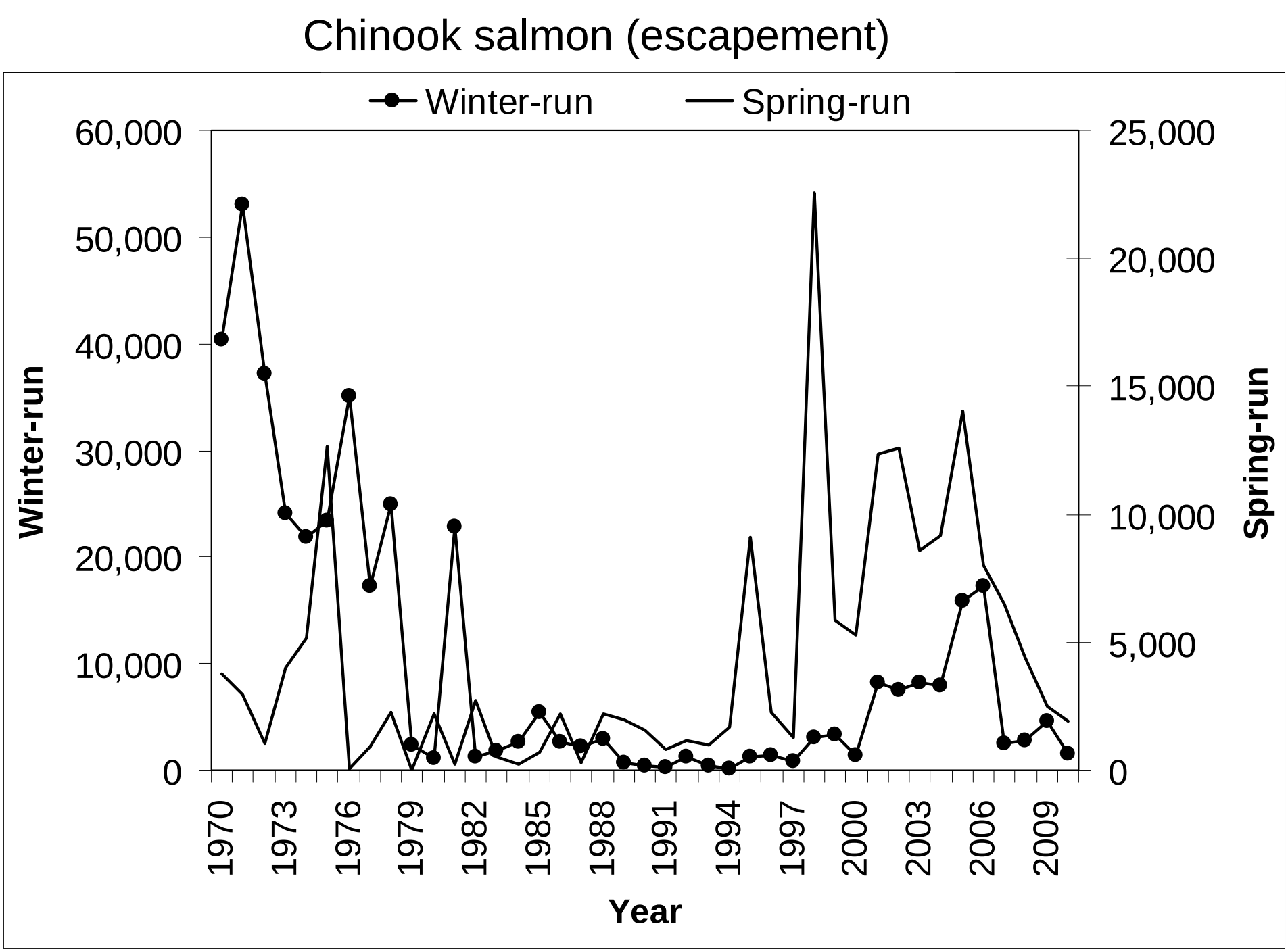
The first four slides depict the decline and present extremely low abundance of winter-run and spring-run Chinook, delta smelt and longfin smelt.

The remainder of the sides depict why the Department has concluded that it's appropriate to recommend increased striped bass bag limits and smaller size limits.

After declining to extremely low abundances by the early 1980s, winter-run and spring-run Chinook were listed under State and Federal endangered species acts.

Abundance of both species is still extremely low.

Source: DFG 2011 Status of Central Valley Chinook Salmon Populations 2010 Annual Spawning Escapement Update

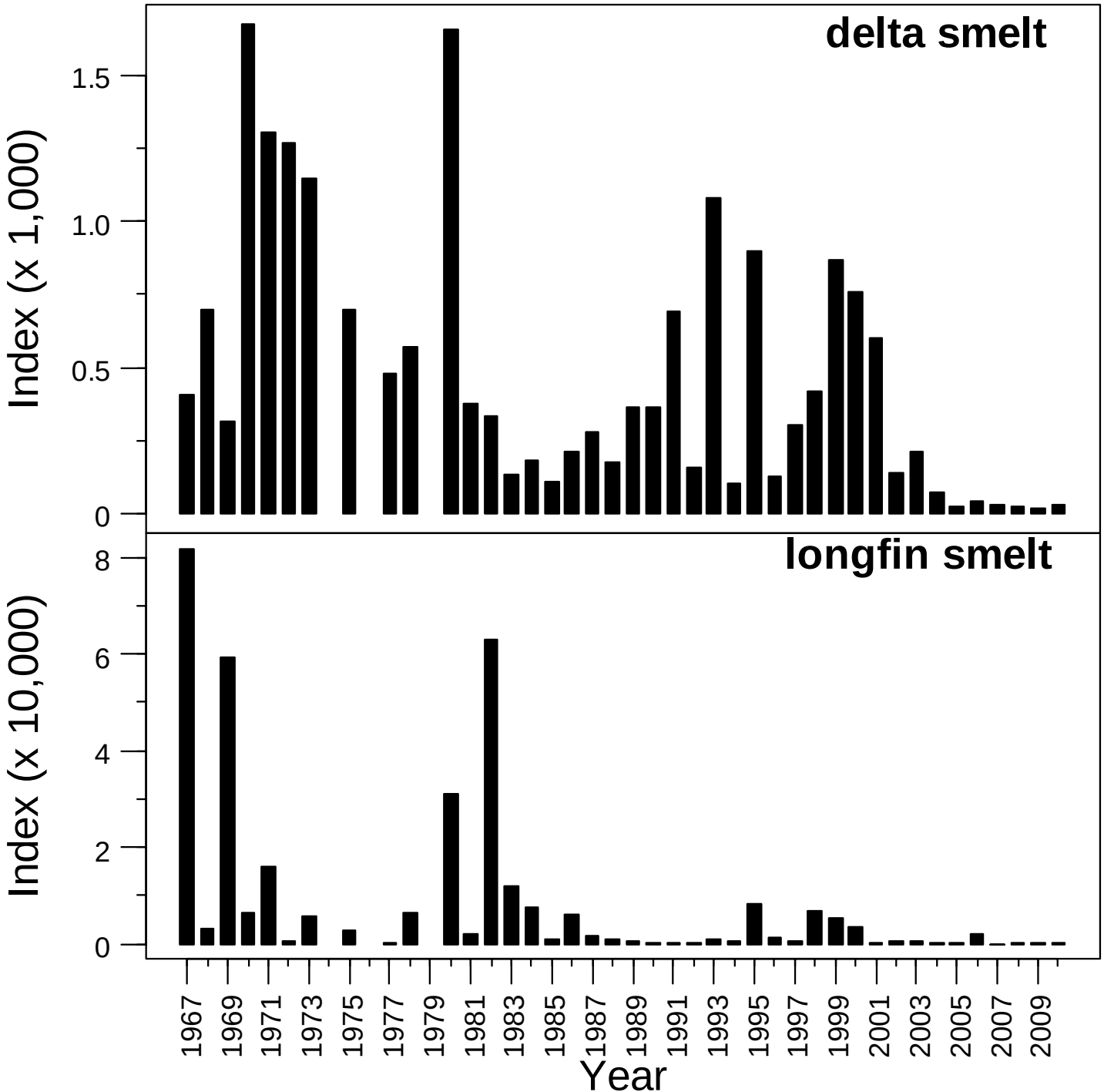

Chinook salmon (escapement)
Winter-run
Spring-run
60,000
50,000
40,000
30,000
20,000
10,000
0
25,000
20,000
15,000
10,000
5,000
0
Winter-run
Spring-run
1970
1973
1976
1979
1982
1985
1988
1991
1994
1997
2000
2003
2006
2009
Year

Due to extremely low abundances in the 1980's, delta smelt was listed under the State and Federal endangered species acts in 1993 and they have declined further since listing.

After suffering a decline similar to delta smelt, longfin smelt was listed under the State endangered species act in 2010.

Abundance of both species is still extremely low.

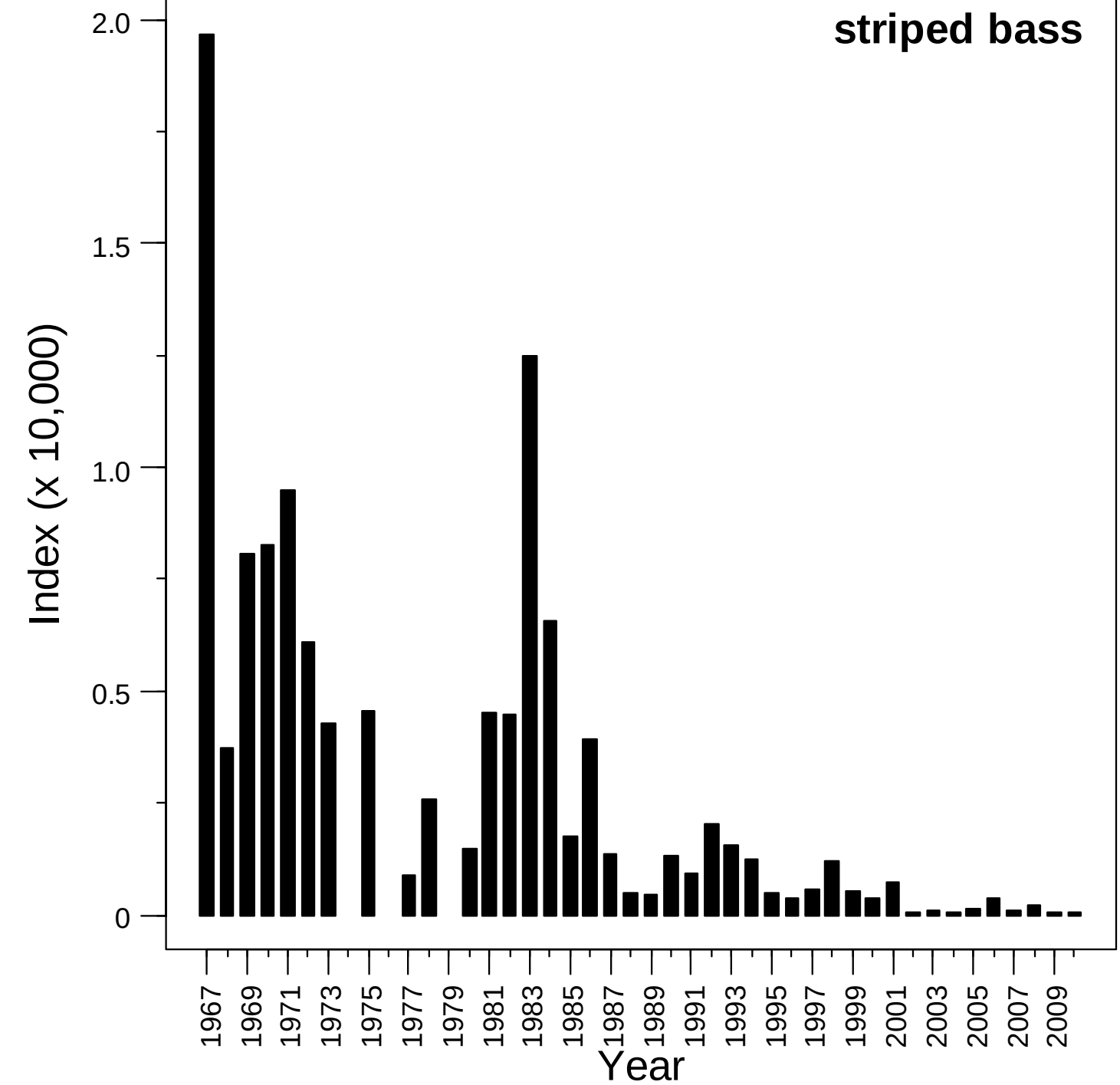
Source: DFG Fall Mid-Water Trawl Survey data 1967 - 2010



- Indices from FMWT survey
- Show decline since beginning of survey

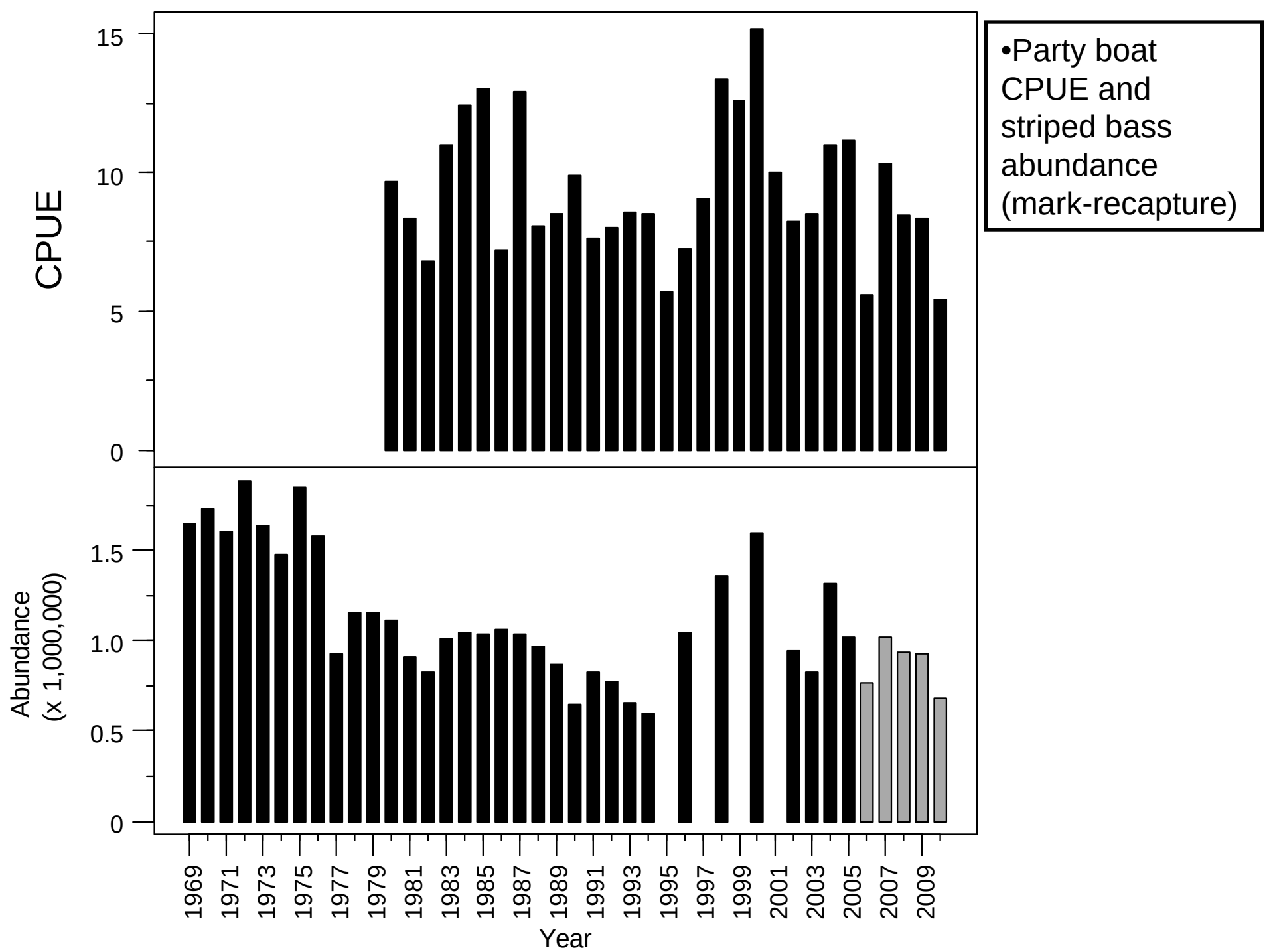
The next slide shows that production of young-of-the-year striped bass has declined in parallel with the decline of delta smelt and longfin smelt, although a later slide will show that the abundance of adult striped bass remains high due to management actions and the species' innate resilience.

Source: DFG Fall Mid-Water Trawl Survey data 1967 - 2010



- Index from FMWT survey
- Show decline since beginning of survey

- The catch of striped bass per hour of fishing from Party Boats is an index of adult striped bass abundance.
- The Department estimates adult striped bass abundance using mark-recapture techniques.
- Trends in both of these measures are very similar, which means the Department and anglers are seeing the same trends in adult striped bass abundance.
- Note that subadult striped bass also eat listed fish and --- as a rule of thumb --- it's reasonable to expect that there are about as many subadult striped bass as there are adult striped bass.

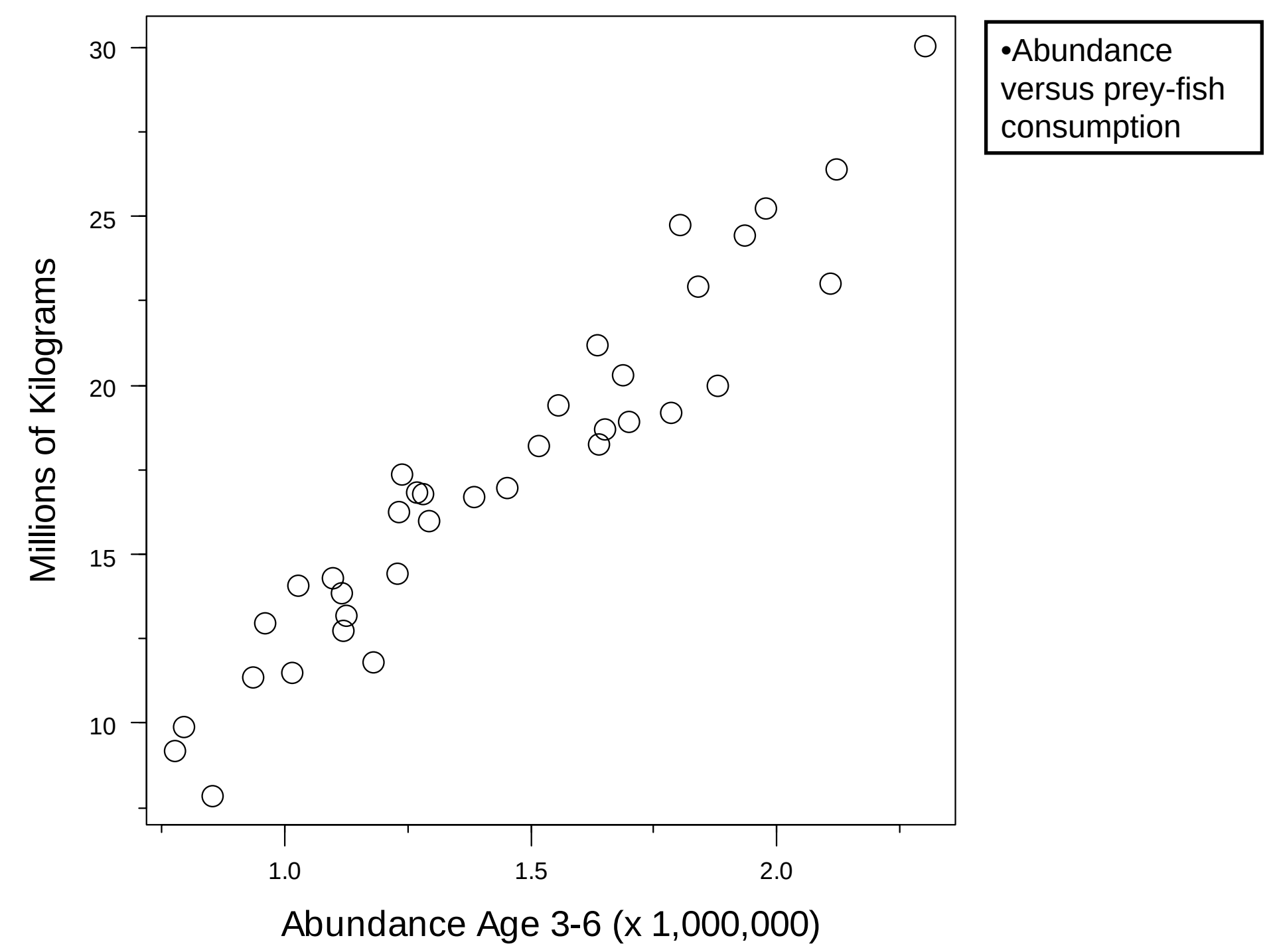

CPUE
15
10
5
0
Abundance
(x 1,000,000)
1.5
1.0
0.5
0
1969
1971
1973
1975
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
Year
•Party boat CPUE and striped bass abundance (mark-recapture)

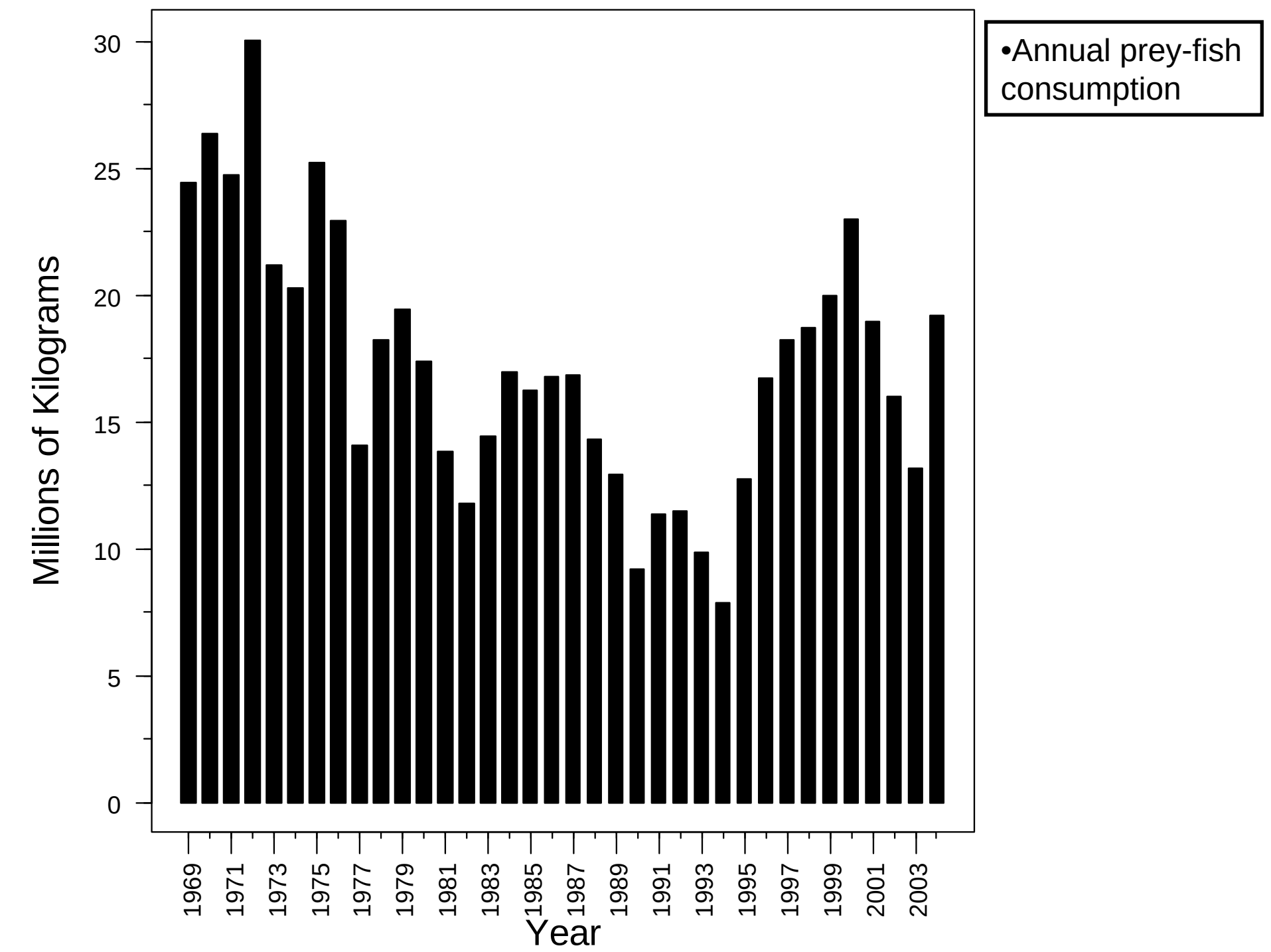
Since listed species remain at depressed populations levels and striped bass --- the ones large enough to eat listed species --- are still abundant, the next nine slides depict why the Department proposes to enact measures that reduce predation by striped bass on the listed species.

The following scatter plot and time series of age 3-6 striped bass (a subset of the adult population) versus the amount of prey fish consumed is from (in large part) Department data analyzed using a technique called 'bioenergetics'.

Bioenergetics estimates how many calories a fish must have consumed in order to grow as fast as it did to a particular size. When coupled with estimates of striped bass abundance and striped bass feeding data, the following two slides show that striped bass consume vast amounts of fish.

This technique has not been used to estimate how much of any particular prey fish are consumed by the striped bass population.


•Abundance versus prey-fish consumption
Millions of Kilograms
30
25
20
15
10
1.0
1.5
2.0
Abundance Age 3-6 (x 1,000,000)


•Annual prey-fish consumption
Millions of Kilograms
0
5
10
15
20
25
30
1969
1971
1973
1975
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
Year

Considering listed species remain at depressed levels and adult striped bass are still abundant, and striped bass consume a lot of fish each year, the next five slides show what striped bass eat by season and area.

For the purposes of demonstration, these slides are from a study published in 1967 when listed species were more common.

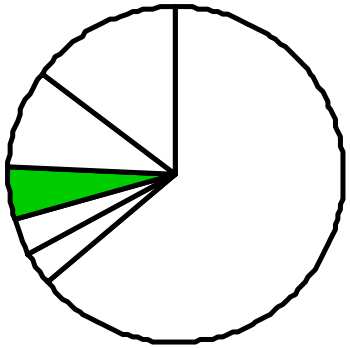
Because listed species are depressed and striped bass are still abundant, recent feeding studies rarely detect listed species in the diet of striped bass. This is a 'needle in a haystack situation', where listed fish are the needle and striped bass are the haystack.

Each following pie charts show the proportion of various species in the diet of striped bass. For the purposes of this presentation, only Chinook salmon, longfin smelt, and delta smelt are highlighted.

Chinook salmon, longfin smelt, and delta smelt were often a common part of the striped bass diet. Although striped bass can't satisfy much of their nutritional needs by eating listed species now, striped bass clearly have the potential to eat many Chinook salmon, longfin smelt, and delta smelt.

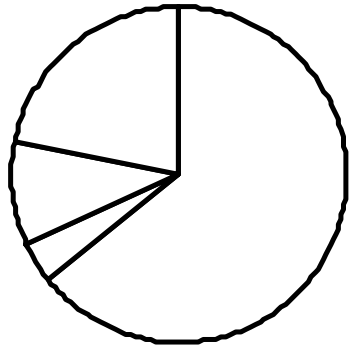
Season: Summer

Crocket to Pittsburg

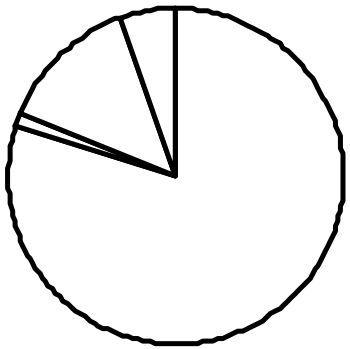


Lower Sacramento River

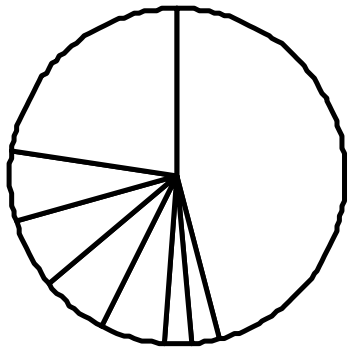
San Pablo Bay



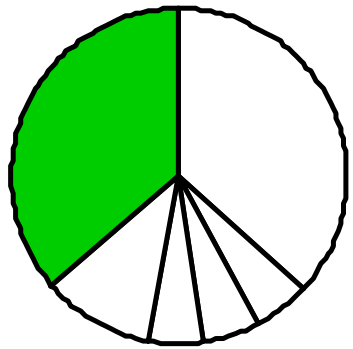
Delta



San Francisco Bay



Upper Sacramento River



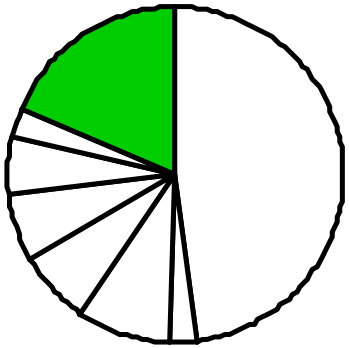
Longfin smelt

Chinook salmon

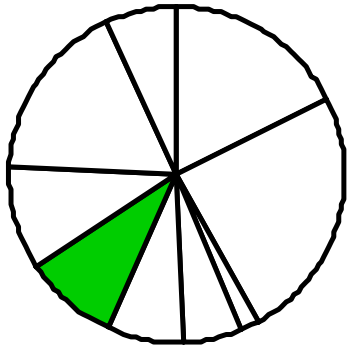
Delta smelt

Season: Spring

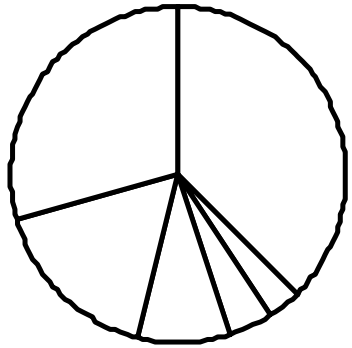
Crocket to Pittsburg



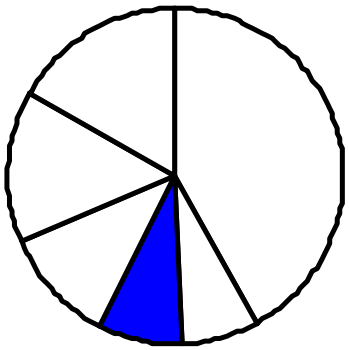
Lower Sacramento River



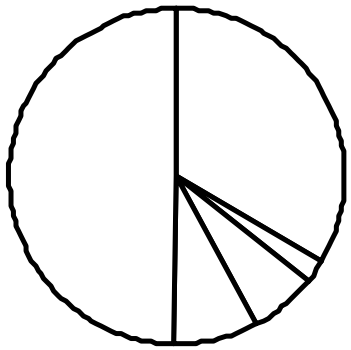
San Pablo Bay



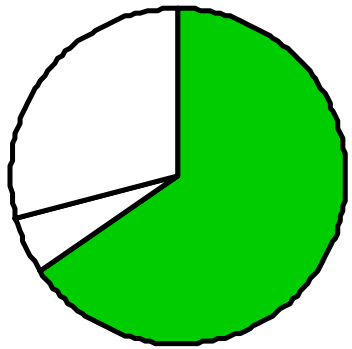
Delta



San Francisco Bay



Upper Sacramento River



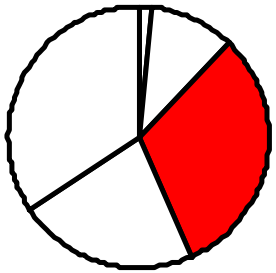
Longfin smelt

Chinook salmon

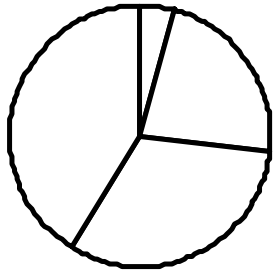
Delta smelt

Season: Winter

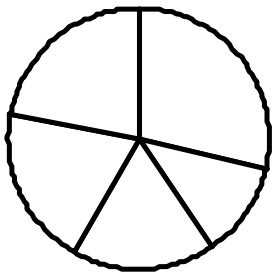
Crocket to Pittsburg



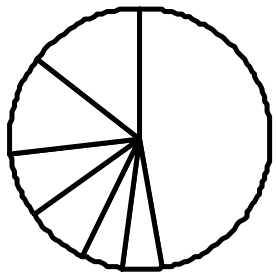
San Francisco Bay



Delta



San Pablo Bay



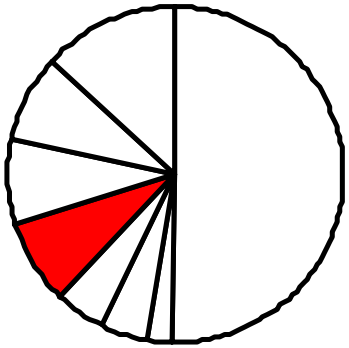
Longfin smelt

Chinook salmon

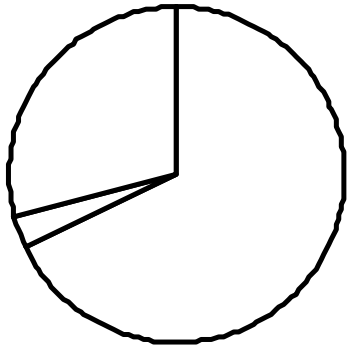
Delta smelt

Season: Fall

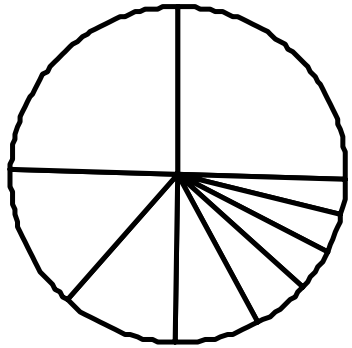
Crocket to Pittsburg



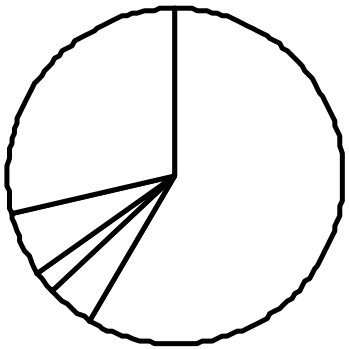
Lower Sacramento River



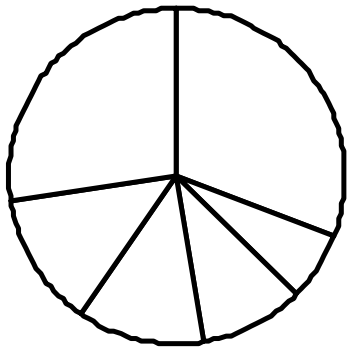
San Pablo Bay



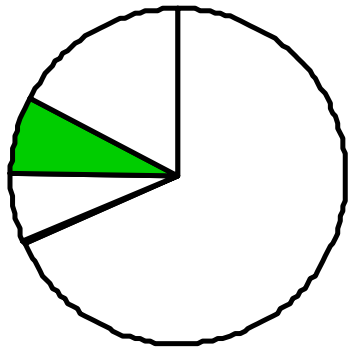
Delta



San Francisco Bay



Upper Sacramento River



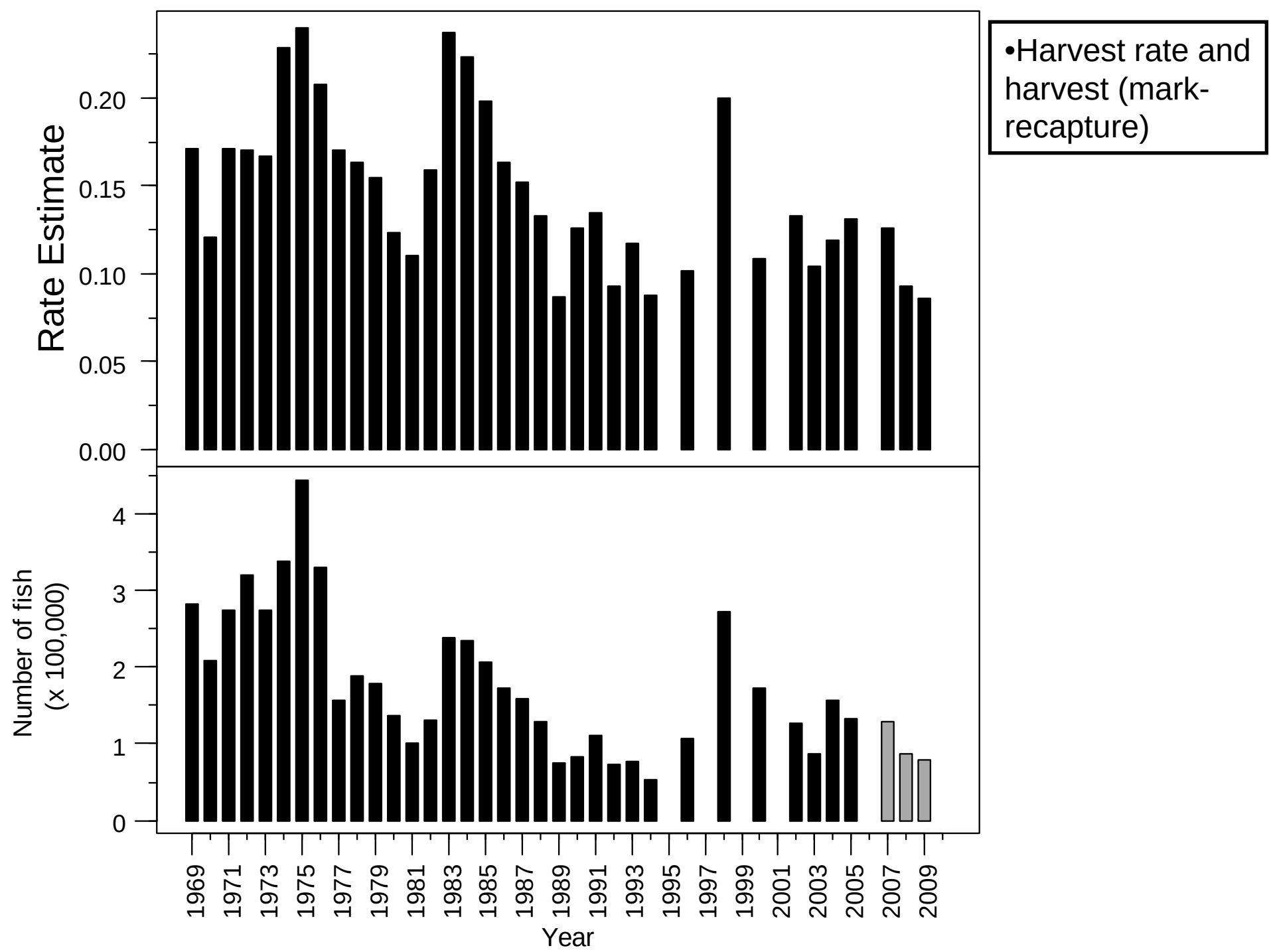
Longfin smelt

Chinook salmon

Delta smelt

The final two data slides depict some of the information about the striped bass fishery that bears on the potential for anglers to harvest more striped bass --- thereby reducing striped bass predation on the listed species.

In the first slide, the top panel shows the fraction of adult striped bass harvested by anglers each year. Using the abundance estimates, harvest rate, and a little algebra, the bottom panel shows how many striped bass were harvested each year.

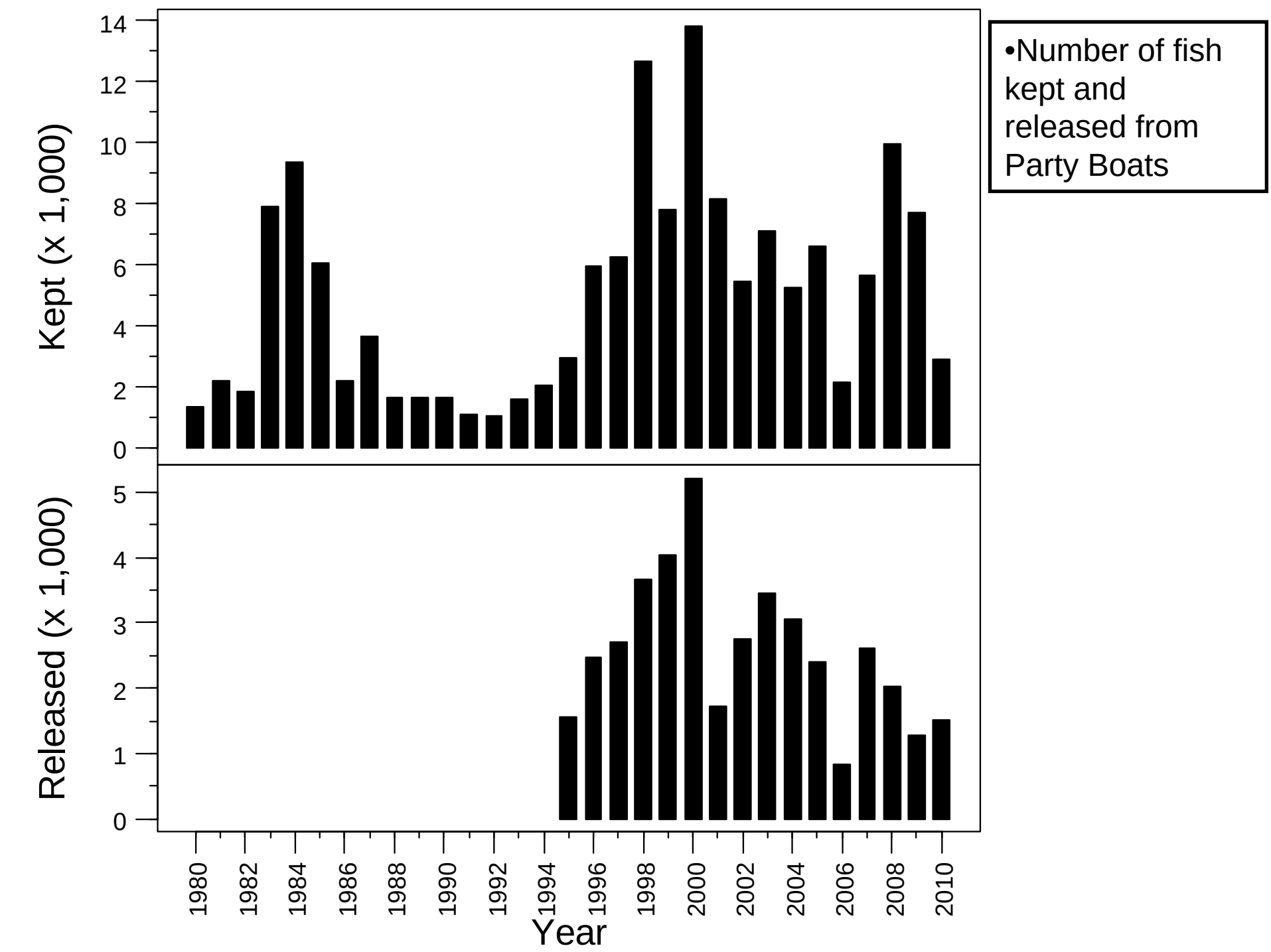

Rate Estimate
0.00
0.05
0.10
0.15
0.20
Number of fish
(x 100,000)
0
1
2
3
4
1969
1971
1973
1975
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
Year
•Harvest rate and harvest (mark-recapture)

The final data slide depicts Party Boat data which is a long time series that clearly shows the ebbs and flows of the striped bass fishery.

The top panel depicts reported catch of striped bass by Party Boats whereas the bottom panel depicts the number of striped bass released by Party Boats.

Although the Party Boats don't report the size of striped bass they catch or release, data on striped bass demographics indicates it is likely that most of the released fish were less than the present size limit of 18 inches.

Other Department data suggests that anglers fishing from Carquinez Strait to the base of dams in the Sacramento River watershed released an average of 257,357 fish annually during the periods 1998-2000 and 2008-2010.


Kept (x 1,000)
0
2
4
6
8
10
12
14
Released (x 1,000)
0
1
2
3
4
5
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
Year
•Number of fish kept and released from Party Boats

The previous 22 slides were examples of the sort of information considered by the Department during development of the proposed fishing regulations.

They depict the decline and present extremely low abundance of winter-run and spring-run Chinook, delta smelt and longfin smelt; the decline in production of young striped bass as well as striped bass resiliency and present abundance; the probability that striped bass eat many listed species; and the potential for anglers to help recover the listed species by reducing the number of predator-sized striped bass.

How would we know if it's working?

- Adaptive management plan will assess the efficacy of the new regulations
  - as a means of increasing fishing effort
  - as a means of increasing harvest of striped bass.

- Additional monitoring and increased creel surveys
  - determine the impact of the increased daily bag and possession limits and the decreased size limit

Finding a Fair Balance

- Under the proposed changes:
- Striped bass would likely become somewhat less abundant and the average size of striped bass would likely decline
- Fishing effort and fishing success would likely increase for a period of at least several years
- Populations of listed species will benefit

Finding a Fair Balance

The proposed regulatory change:

- Is required by the terms of a settlement *(settlement required a proposal and the DFG developed this proposal with input from Federal Agencies, Plaintiffs and Intervenors)*
- Is based on the best available science
- Strikes a fair balance between species
- Will not decimate the striper fishery *(DFG's perspective)*
- Will help to preserve listed species
- Reflects DFG's overall approach to serving as stewards for the state's fish and wildlife.